

Serial No. **10/721,180**

Docket No. **K-0585**

Reply to Office Action of December 18, 2006

Amendments to the Drawings:

The attached drawing includes an amendment to Figure 1. This sheet, which includes Figure 1, replaces the original sheet including Figure 1. Figure 1 has been amended to include reference number C1. No new matter is added.

Attachment: Replacement Sheet (1)
Annotated Sheet Showing Changes (1)

REMARKS/ARGUMENTS

Claims 21-49 are pending in this application. By this Amendment, the title, drawings, abstract and specification are amended, claims 21-49 are added, and claims 1-20 are canceled without prejudice or disclaimer. The title, drawings, abstract and specification are amended for clarification purposes only. No new matter is added. Support for the claims can be found throughout the specification, including the original claims and the drawings. Withdrawal of the rejections in view of the above amendments and the following remarks is respectfully requested.

I. Objection to the Title

The Office Action objects to the title, alleging that the title is not descriptive. The title has been amended to recite "Washing Machine with Brake Resistance Assembly Having Coils with Different Resistance" as suggested by the Examiner. Accordingly, the objection should be withdrawn.

II. Rejection Under 35 U.S.C. §112, Second Paragraph

The Office Action rejects claims 1-11 under 35 U.S.C. §112, second paragraph, as allegedly indefinite. Claims 1-11 are canceled, and thus the rejection is moot. It is noted that the Examiner's comments regarding claims 1-11 have been taken into consideration in drafting new claims 21-49.

III. Rejections Under 35 U.S.C. §102(b) and 35 U.S.C. §103(a)

The Office Action sets forth various rejections of claims 1-16 and 18-20 under 35 U.S.C. §102(b) and §103(a) over various combinations of Japanese Patent No. 2000-125600 to Abe et

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al. (hereinafter “Abe”), U.S. Patent No 5,508,671 to Takashi (hereinafter “Takashi”), U.S. Patent No. 5,138,293 to Ishimaru (hereinafter “Ishimaru”), U.S. Patent No. 4,556,827 to Erdman et al. (hereinafter “Erdman”), U.S. Patent No. 3,943,391 to Fehr (hereinafter “Fehr”), and U.S. Patent No. 5,409,996 to Shinohara et al. (hereinafter “Shinohara”). Claims 1-20 are canceled, and thus these rejections are moot.

IV. New Claims 21-49

New claims 21-49 are added to the application. It is respectfully submitted that new claims 21-49 define over the applied prior art references and meet the requirements of 35 U.S.C. §112.

More specifically, new independent claim 21 is directed to a washing machine which includes a brake resistance assembly. Independent claim 21 recites that the brake resistance assembly includes a case which defines an interior space, and first and second terminals at least partially housed within the interior space defined by the case and configured to be coupled to a motor drive circuit. The brake resistance assembly also includes first and second resistance coils configured to convert electric energy generated when the motor is turned off into thermal energy.

New independent claim 37 is directed to a brake resistance assembly, including a case which defines an interior space, and first and second terminals at least partially housed within the interior space defined by the case and configured to be coupled to a motor drive circuit. The brake resistance assembly also includes first and second coils configured to convert electric

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energy generated when a motor is turned off into thermal energy. Independent claim 37 also recites that the case comprises a first partition provided in the interior space and configured to receive the first and second terminals, and a second partition provided in the interior space at a predetermined distance from the first partition.

Abe, Takashi, Ishimaru, Erdman, Fehr and Shinohara, either alone or in combination, neither disclose nor suggest such features, let alone the respective claimed combinations of features.

A. Abe

Abe discloses a DC electromagnetic brake used with an electric motor M. When power is first applied to the motor M, the Abe circuitry applies a relatively high initial current to a first coil 17a of an electromagnet 16 to generate an attractive force large enough to cause a brake to be released, thus allowing the motor M to turn. Once the motor picks up some rotational speed, the circuitry applies a reduced current to both the first coil 17a and a second coil 17b of the electromagnet 16, to thereby generate an electromagnetic force that is sufficient to maintain the brake in the released position. Thus, the electromagnetic brake disclosed by Abe is engaged at startup and during operation of the motor M, and simply releases a hold on the motor M to allow the motor to turn.

Abe makes no mention of what will happen when power is removed from the motor, and the motor is switched off. Presumably, current would no longer be applied to the coils of the electromagnet, and the brake would return to the locked position.

In contrast, the brake release assembly recited in new independent claims 21 and 37 is configured to dissipate electric energy generated when a motor is turned off. Claims 21 and 37 recite first and second resistance coils configured for this purpose. The resistance coils are configured to convert electrical energy generated when a motor is turned off into thermal energy, to thereby dissipate the generated electrical energy.

Abe neither discloses nor suggests that its disclosed electromagnetic brake has any purpose other than engaging and releasing a mechanical motor brake, let alone that the disclosed electromagnetic brake is capable of dissipating electric energy when the motor M is turned off. It is respectfully submitted that the electromagnetic brake disclosed by Abe is not properly compared, either in structure or in function, to the brake release assembly recited in new independent claims 21 and 37.

The Office Action asserts that the electromagnet 16 disclosed by Abe is comparable to the case recited in the claims. However, Abe makes no specific disclosure as to any additional structure related to the electromagnet 16. For example, Abe neither discloses nor suggests that any portion of the electromagnet 16 defines an interior space, as does the case recited in new independent claims 21 and 37. Further, Abe neither discloses nor suggests first and second terminals at least partially housed within such an interior space, as recited in new independent claims 21 and 37. Further, because Abe neither discloses nor suggests that the electromagnet 16 forms any type of interior space, Abe necessarily also fails to disclose or suggest first and second

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partitions provided in such an interior space, as recited in new independent claim 37, let alone a first partition which receives first and second terminals, as recited in new independent claim 37.

B. Erdman

Erdman discloses a laundry machine 8 driven by an electronically commutated motor (ECM) 30. The ECM 30 is controlled by a panel switch arrangement which includes, amongst numerous switching components, a brake relay 130 to control power to a set of stator windings based on a selected operating mode of the machine 8. It appears, based on the remarks in the Office Action, that Erdman is applied to teach a cabinet, drum and motor of a washing machine, and the use of a brake relay 130 with a laundry machine 8. However, Erdman makes no specific disclosure as to the structure or composition of the brake relay 130, and thus Erdman neither discloses nor suggests a brake resistance assembly as recited in new independent claims 21 and 38.

Erdman was applied in combination with Abe in the Office Action, relying instead on Abe to allegedly teach the features of the recited brake resistance assembly. However, as set forth above, Abe neither discloses nor suggests each of the features of the brake resistance assembly as recited in new independent claims 21 and 38, and thus fails to overcome the deficiencies of Erdman.

C. Takashi

Takashi discloses an electromagnetic clutch 1 for use with a vehicle air conditioner, including an armature assembly 4 mounted on a rotating shaft 3 of a compressor 2, a rotor 7,

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and an electromagnet 8. The Office Action applies Takashi in combination with Abe and/or Erdman in the Office Action, as allegedly teaching coils wound around bobbins. However, Takashi neither discloses nor suggests a brake resistance assembly which includes the features recited in new independent claims 21 and 38, and thus fails to overcome the deficiencies of Abe and/or Erdman.

D. Ishimaru

Ishimaru discloses a terminal connection structure for an electromagnetic coupling device. The Office Action applies Ishimaru in combination with Abe and/or Erdman as allegedly teaching coils wound around bobbins, and grooves which allegedly form a rugged surface. However, Ishimaru neither discloses nor suggests a brake resistance assembly which includes the features recited in new independent claims 21 and 38, and thus fails to overcome the deficiencies of Abe and/or Erdman.

E. Fehr

Fehr discloses an electromagnetic coupler with an electromagnetic winding. The Office Action applies Fehr in combination with Erdman and Abe in combination with either Takashi or Ishimaru as allegedly teaching the use of Aluminum or Copper as a coil material. However, Fehr neither discloses nor suggests a brake resistance assembly which includes the features recited in new independent claims 21 and 38, and thus fails to overcome the deficiencies of Erdman and/or Abe and/or Takashi and/or Ishimaru.

F. Shinohara

Shinohara discloses a thermoplastic resin composition for use in the molding of household electronic parts. The Office Action applies Shinohara in combination with Abe, either alone or in combination with Takashi or Ishimaru, as allegedly teaching the use of a molded resin. However, Shinohara neither discloses nor suggests a brake resistance assembly which includes the features recited in new independent claims 21 and 38, and thus fails to overcome the deficiencies of Abe and/or Takashi and/or Ishimaru.

Accordingly, it is respectfully submitted that, for the reasons set forth above, new independent claims 21 and 38, as well as new claims 22-37 and 39-50, which depend respectively therefrom, define over the applied prior art references.

V. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned, **Joanna K. Mason**, at the telephone number listed below.

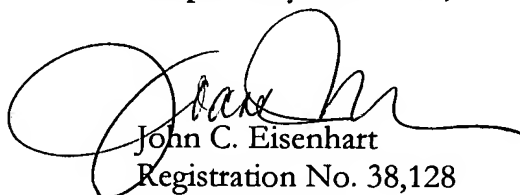
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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,



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FIG. 1

